

Syllabus  
**Modern computer-based methods of statistics**

The content of the course:

- Missing value-imputation
- To learn and overview the multivariate statistical methods and its computational tools. Dimension reduction. Principal components, factor models, canonical correlation.
- Data analysis methods for discrete data, especially for binary data, logistic regression.
- Methods based on multivariate scaling. Correspondence-analysis. Grouping, clustering and classification.
- Methods analyzing survival data. Probit, logit and nonlinear regression. Cox-regression.
- Further subjects, depending on the interest of the participants

The class is a computer-lab based practice. The used tool is the R-project.

Grading is based on the following components:

- Homeworks 25%
- Participation on the classes 10%
- Individual project 25%
- A quiz (open-book), written in Canvas system at the end of the semester: 40%

The relevant literature will be given week-by-week, in the Teams channel of the course

For the first week:

<http://stefvanbuuren.name/fimd/sec-pmm.html>